

SHOULD B.C. HYDRO RATEPAYERS SUBSIDIZE THE ELECTRIFICATION OF OIL AND GAS PRODUCTION?

During the current blizzard of pre-election funding announcements by the federal Liberal government, the proposal to encourage natural gas operations in the province to power more of their operations with grid electricity instead of fossil-based fuel raises serious questions. In late August, Prime Minister Justin Trudeau and Premier John Horgan announced a rather vague intention to fund unspecified transmission projects, thereby enabling the sale of more “clean” electricity by B.C. Hydro.¹

In theory, this displacement of fossil fuel (oil or natural gas) by electricity in the production of natural gas and related liquids meets the public policy objective of reducing the amount of green house gas (GHG) being generated, creating temporary construction jobs in extending the transmission lines, and reducing the amount of surplus B.C. Hydro electricity.

The announcement was panned by Green party leader Andrew Weaver who said the government should not be subsidizing the natural gas industry, which he called “the dinosaurs of yesterday.”²

The intention to extend the grid assumes that capital and operating costs of the electrification of the natural gas fields in the north east region would be funded by B.C. Hydro. Neither the government nor Dr. Weaver mentioned that the electrification would likely result in a net loss to B.C. Hydro ratepayers. This is because the marginal cost of the electricity is higher than the price that will be charged to the gas producers. It appears that the NDP government has adopted the philosophy of the previous Liberal government that rather than B.C. Hydro being operated on a strictly commercial basis, it is an instrument for the achievement of broader social policy or political objectives.

Part 1 – The Proposal

The building of new transmission lines to increase the amount of electricity supplied to the Montney Basin natural gas facilities was originally announced by the Liberal government in November 2016.³ Then energy minister Bill Bennett said that extending

¹ <https://vancouversun.com/business/energy/ottawa-b-c-to-push-electrification-of-natural-gas-industry-to-cut-carbon-emissions> see also <https://www.naturalgasintel.com/articles/119460-canada-bc-promote-electricity-in-powering-regions-natural-gas-activity>

² Ibid.

³ <https://www.dawsoncreekmirror.ca/regional-news/lng/province-unveils-aggressive-plan-to-electrify-b-c-natural-gas-fields-1.3493881>

B.C. Hydro's transmission grid into remote production sites would reduce GHG emissions, but would require a federal contribution for the capital cost. The clear implication is that such capital expenditures would not be justified on a pure cost/benefit analysis; the GHG reduction and a federal financial contribution justified the cost.

Bennett also justified the project as a way to reduce B.C. Hydro's excess electricity: "We're trying to drive demand for electricity, because we have excess clean electricity and obviously we'd like to sell it in the province in ways that contribute to our economy and help create jobs," he said.

B.C. Hydro has previously spent some \$280 million in expanding the capacity of the transmission line to the Dawson Creek/Chetwynd, which was completed in late 2015. The new proposal, now rebranded as the Peace Region Electrical Supply (PRES) project, is estimated to cost between \$197 to \$348 million,⁴ and be completed by fiscal year 2021/22.⁵

Who Pays the Social Cost – Ratepayers or Taxpayers?

In 2016 energy minister Bennett was clear that he did not want B.C. Hydro ratepayers to subsidize the reduction in natural gas industry GHG emissions. "I've always wanted to have electricity available for the natural gas industry, but I've never believed we can or should do that on the backs of provincial ratepayers," he said.⁶

This distinction between the taxpayer and the ratepayer is important to allocating responsibility and accountability in funding government programs and initiatives. But for many years the distinction has been blurred by various governments. B.C. Hydro has been required to fund projects that were not economically justified (such as the North West Transmission line, or the Site C dam) on a commercial basis but were mandated by its single shareholder for public policy reasons.

The Cost of the PRES Project

Is there a commercial basis to expend between \$200 and \$350 million to electrify the north east natural gas fields? Apparently, the government does not believe that the B.C. Utilities Commission (BCUC) would approve the capital expenditure because it exempted the PRES project from the regulator's purview. By cabinet order (OIC 101/17) under the Clean Energy Act, the PRES was deemed a "prescribed undertaking" and thereby exempt from approval by the BCUC.⁷

⁴ The February 2019 service plan uses an estimate of \$285 million, see p. 24 in <https://www.bcbudget.gov.bc.ca/2019/sp/pdf/agency/bchydro.pdf>

⁵ BCUC, B.C. Hydro F20 to F21 Rate Request, Appendix J, p. 71/133, pdf 1575.

⁶ <https://www.dawsoncreekmirror.ca/regional-news/lng/province-unveils-aggressive-plan-to-electrify-b-c-natural-gas-fields-1.3493881>

⁷ The Clean Energy Act requires requires the BCUC to fund "prescribed undertakings" through the rate mechanism. B.C. Hydro describes prescribed undertakings as "projects, programs, contracts or expenditures prescribed for the purpose of reducing greenhouse gas emissions in British Columbia. The Greenhouse Gas Reduction Regulation

B.C. Hydro mid-range forecast says that the PRES transmission extension could add 590 GWh to the Large Industrial sector sales within between fiscal 2020/21 and fiscal 2024/25.⁸ Using the actual 2018/19 actual revenue per GWh for the Large Industrial sector (\$62.82/MWh) the additional sales would generate approximately \$37 million in revenue. Using the average cost of IPP purchased power (\$87.52/MWh) the annual operating loss would be approximately \$15 million. If the unit price of the surplus domestic sales (\$61.39) was used the additional PRES sales would produce a slight profit.⁹

If the additional 590 GWh demand was supplied with Site C power (approximately 5,100 GWh of additional electricity) after 2024, at a modest cost estimate of \$100/MWh, the annual loss would be approximately \$22 million.

These operating costs exclude the amortization cost of the capital project debt. If a \$250 million capital expenditure for the transmission grid extension was amortized over 40 years at 4% the annual principal and interest cost would be approximately \$12 million. If the net cost after a federal contribution was \$100 million the annual debt service cost would be approximately \$5.0 million.

These scenarios show that the net operating loss (including debt service costs) of the PRES could be between \$5.0 million in the best case, up to a net loss of \$34 million in the worst case (using Site C power and no federal capital contribution). Little wonder that the government exempted the project from the BCUC approval process.

Part 2 – Public Support to the Industry

The Benefit of the Natural Gas Industry to the Province

The natural gas exploration and production industry is a relatively new and important component of the provincial economy, particularly the economy of the north east. The Montney Basin, which includes parts of B.C. and Alberta, is estimated to contain major

issued under the *Clean Energy Act* (B.C. Reg. 102/2012) sets out prescribed undertakings for electrification. Some undertakings must meet cost effectiveness test to be prescribed undertakings.” B.C. Hydro maintains that the PRES project is a prescribed undertaking, and is not subject to the cost effectiveness test; see https://www.bcuc.com/Documents/Proceedings/2019/DOC_53488_B-1-BCH-F20-F21-RR-Application.pdf Pdf 155/3006.

⁸ BCUC, B.C. Hydro Rate Request F2020 to F2021, IR1, BCSEC and Sierra Club 5.1, Pdf 632/2358; shale gas GWh of 1,927 in 2020/21 to 2,518 GWh in 2022/23;

https://www.bcuc.com/Documents/Proceedings/2019/DOC_54173_B-6-BCH-Response-to-Intervener-IR1.pdf

⁹ Calculated from revenue (p. 23) and expenditures (p. 25) tables in B.C. Hydro’s 2018/19 annual report; <https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountability-reports/financial-reports/annual-reports/BCHydro-Annual-Service-Plan-Report-2018-2019.pdf>

reserves of gas and the higher value natural gas liquids.¹⁰ The current production is only a small fraction of the estimated reserves available.¹¹

The province has been offering a variety of financial incentives to the oil and gas industry to develop the resources in B.C. This creates public tax revenues and well-paid employment in the north east, and the opportunity to export liquified natural gas from north coast compression facilities.

But the rapid development of new natural gas supply in North America in particular, and the world generally, has depressed the price paid for this energy source. Horizontal drilling and fracking technology have greatly increased supply at lower costs of production. The resulting lower prices have had the environmental benefit of allowing many industries to switch from coal and oil sources of energy generation to natural gas. The lower prices have even caused current and planned nuclear generation facilities in the United States to become uneconomic.

Production Grows While Royalties Fall

The natural gas industry may be important to the provincial economy in terms of capital investment and employment, but is the public receiving a fair return for this Crown-owned resource? Table 1 shows that in the ten-year period from 2008 to 2018 natural gas production increased by some 75%, while royalties paid to the province (as the owners of the resource) dropped by almost 85%, from \$1.3 billion to only \$199 million.

Clearly the reason for the drop in the royalties is the drop in the price, which has fallen by over 88% during the ten-year period (from \$6.90/gigajoule to \$0.79/gigajoule).

The discouraging result is that the royalties paid to the owners of the resource as a percentage of the value of the natural gas produced fell from 17.5% in 2008 to only 11.8% in 2018.

TABLE 1 -- NATURAL GAS PRODUCTION, VALUE AND ROYALTIES—2008 to 2018

	2008	2013	2018	5 Year %	10 Year %
Production (billion cubic meters)	33.5	44.6	58.9	13.2	75.8
Price (\$ C/GJ)	6.90	2.04	0.79	(61.2)	(88.6)
Value (\$=million)	\$7,525	\$3,146	\$1,693	(46.2)	(77.5)
Natural Gas Royalties (\$=million)	\$1,314	\$ 445	\$ 199	(55.3)	(84.9)

Source: B.C. Financial and Economic Review 2019; Production Table A1.12, Price Table A1.9, Value Table A1.11 and Royalties Table A2.4.

¹⁰ <https://www.naturalgasintel.com/articles/118405-montney-ngl-output-seen-up-16-in-19-says-wood-mackenzie> and

¹¹ <https://www.naturalgasintel.com/articles/118055-montneys-natural-gas-in-place-estimated-at-1965-tcf>

Yet at the same time as the value of the natural gas has declined the tax credits and other taxpayer subsidies to the oil and gas industry have increased. Table 2 shows that from 2013 to 2018 the annual royalty deduction has averaged \$575 million. In the same period the accumulated deep well accumulated credits increased from approximately \$1.0 billion to \$2.62 billion, an increase of over 260%.¹² And this is only one of a number of credits and deductions that the industry enjoys.¹³

TABLE 2 — ACCUMULATED DEEP WELL ROYALTY CREDITS and ANNUAL DEDUCTION (\$=million)

	2013	2014	2015	2016	2017	2018	6 Year %
Deep Well Accum. Credits (\$=mil)	997	1,241	1,398	2,148	2,590	2,622	263.0
Annual Royalty Deduction (\$=mil)	412	587	850	363	447	631	53.2

Source: B.C. Government public accounts, notes to summary statements.

Many are beginning to question whether we should be practically giving away our natural gas resource for the sake of the employment created.¹⁴ The deep well drilling credits in particular have been criticized as too generous, if not actually unnecessary.¹⁵ Green Party leader Andrew Weaver stated the question in his 26 March 2019 speech in the legislature: "There are arguments to be made that supporting B.C.'s gas industry benefits our society. Fair enough. Let's make those arguments. However, the public should be able to determine how much support is being given and whether other industries could put that financial support to better use."¹⁶

Part 3 – Reducing the Carbon Footprint Using Other People's Money

Environmentalists and the supporters of independent power generation are encouraging governments to electrify the north east oil and gas fields, to assist industry in reducing the amount of GHG emissions. But should taxpayers – or B.C. Hydro ratepayers – be paying the cost, or should the oil and gas industry be expected to use lower clean and renewable power as part of its cost of operation?

¹² The drilling credits reduce future royalties when the wells go into production.

¹³ See the discussion on May 29, 2018, in B.C. Hansard beginning on page 5149;

<https://www.leg.bc.ca/content/hansard/41st3rd/20180529pm-Hansard-n145.pdf>

¹⁴ <https://in-sights.ca/2019/08/13/rising-gas-production-declining-gas-revenue/>

¹⁵ https://www.timescolonist.com/opinion/columnists/les-leyne-ex-bureaucrat-s-swan-song-raps-gas-royalties-1.23772739?fbclid=IwAR0UfjIO485LbGP3JbILXmEzswgEXea8tUs9vMhUNBIx_YUj6B_N467o6uw and <https://vancouver.sun.com/opinion/columnists/vaughn-palmer-weaver-says-taxpayers-shortchanged-by-archaic-well-drilling-incentives>

¹⁶ <https://www.leg.bc.ca/content/hansard/41st4th/20190326pm-Hansard-n222.pdf> p. 7762.

Shell's Saturn gas processing plant is fully electric because B.C. Hydro upgraded the power supply to the region through the Dawson Creek/Chetwynd transmission line. However, the B.C. Oil and Gas Commission says that only 13 of the 110 gas plants are electrified.¹⁷ Shell is also using electricity to power some of its drilling operations, but most of the extraction and processing operations are too remote from the B.C. Hydro's transmission lines to benefit from the use of electricity (assuming the cost is comparable to natural gas).

Based on growth forecasts from the Montney region, Enbridge has announced a \$2.5 billion natural gas liquids processing plant and up to 170 kilometers of pipe which will be completed by 2024.¹⁸ The plant will be powered by electricity supplied by B.C. Hydro.

These examples show that the oil and gas industry are internalizing the cost of using electricity to power production and processing operations in the north east. The deep well production credits should be redefined to require these operations to use renewable power sources (hydro, solar, wind etc.) to power their operations.

Is the Price of Electricity Based on Economics or Political Decisions?

The NDP government is following in the footprints of previous governments in creating a dual role for our public utility. It must operate as a commercial corporation producing safe, reliable and affordable electricity, while at the same time implementing government policies. As noted in the first phase report of the 2019 Comprehensive Review of B.C. Hydro: "The two objectives are not always aligned, particularly in cases where implementing government policy may have costs for BC Hydro and its customers."¹⁹

The answer to this dilemma is unclear. The government appears to imply that reconciling the potential conflict between assessing initiatives on their commercial viability, or fulfilling some broader public policy purpose, is not the role of the BCUC. The regulator is bound to approve capital projects and set annual rates based on criteria that ensure a balance between what is fair to the shareholder and to the ratepayers. It is neither equipped – nor should it be expected – to intrude into assessing the more intangible costs and benefits of competing public policy objectives. This is left to the discretion of cabinet.

Yet the government seems to want the best of both worlds. It wants the perceived benefit of reduced carbon emissions in the north east oil and gas fields, through the use of grid electricity, and it expects B.C. Hydro ratepayers to cover the operating losses of the PRES initiative, which cannot be justified through a normal return on investment calculation.

A more honest approach, which was not discussed in the first report of the comprehensive review, would be for the government (the taxpayer) to fund the

¹⁷ <https://www.cleanenergybc.org/news/electricity-can-defuse-lngs-carbon-bomb-study-says>

¹⁸ <https://biv.com/article/2019/08/enbridge-proposing-25b-ngl-infrastructure-project-northeastern-bc>

¹⁹ https://www.bcuc.com/Documents/Proceedings/2019/DOC_53488_B-1-BCH-F20-F21-RR-Application.pdf p. 1.

operating losses that arise from these government-mandated initiatives through an annual grant to B.C. Hydro (or a reduction in its expected return on equity). This method of aligning costs with responsibilities would protect the ratepayers from the cost of political decisions, and more correctly show the true cost of government programs and initiatives.²⁰

The NDP government has expressed its support for a fully independent B.C. Utilities Commission to regulate the operation of B.C. Hydro, and has removed many of the restrictions on its rate-setting authority imposed by the Liberals.²¹ Yet it has not made this essential step toward a clear separation of roles and responsibilities. Apparently, it is more expedient to load the extra costs on B.C. Hydro's books rather than have them disclosed in the government's budget and public accounts.

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²⁰ Under this approach the annual net losses of the Site C generation project would be paid by the taxpayer, not added to the cost of electricity, as it was a political decision rather than a decision of the BCUC.

²¹

http://www.bcpolicyperspectives.com/media/attachments/view/doc/commentary_auditor_general_removes_qualification_19_july_2019/pdf/commentary_auditor_general_removes_qualification_19_july_2019.pdf

